



SMITHSONIAN ZooGOER

For members of **FRIENDS OF THE NATIONAL ZOO**
JAN | FEB | 2013

Small and
sweet-looking,
fishing cats are
feisty hunters
with a taste
for sushi.

Cuddly **KILLERS**

- » New Arrivals at the Zoo
- » Why Milk Matters
- » Flamingos



Good day.

Great day.

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FEATURES

CLYDE NISHIMURA

Little Cats, Big Attitude

Small felines in a large, wild world, fishing cats survive by being tough—and snaring food in a unique and crafty way. Meet these Asia Trail wonders, who just reproduced here for the first time in the Zoo's history.

BY CRISTINA SANTIESTEVEAN

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BY ANNE GODDARD

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BY WILLIAM LAZARO

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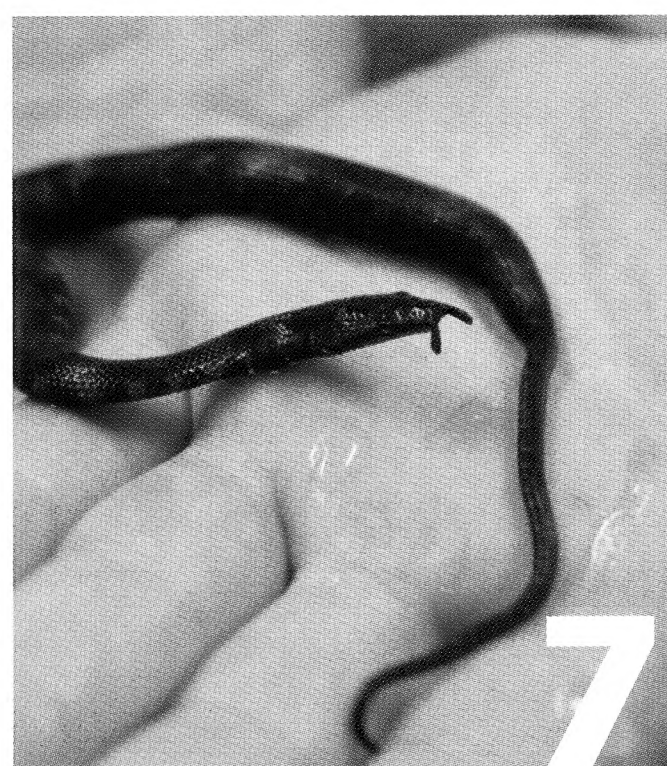


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DEPARTMENTS

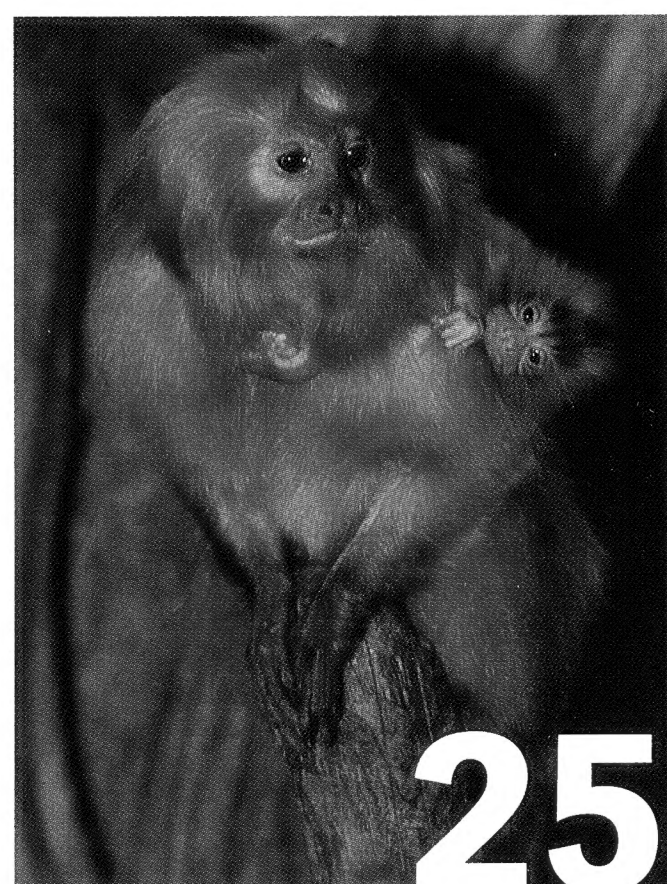
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SMITHSONIAN Zoogoer



is the dedicated partner of the Smithsonian's National Zoological Park. FONZ provides exciting and enriching experiences to connect people with wildlife. Together with the Zoo, FONZ is building a society committed to restoring an endangered natural world. Formed in 1958, FONZ was one of the first conservation organizations in the nation's capital.

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Membership in FONZ supports the animal care, conservation, and educational work of the Smithsonian's National Zoo. It also offers many benefits: a Smithsonian Zoogoer subscription, discounts on shopping and events, discounted or free parking, and invitations to special programs and activities. To join, call 202.633.3034, or visit fonz.org/join.htm.

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FONZ's membership structure changed on January 1, 2013. Please see page 9 for details.

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On the cover: The fishing cat's cuddly looks belie its fierce nature. PHOTO BY CLYDE NISHIMURA



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“THE DIGNITY OF THE ARTIST LIES IN HIS DUTY OF KEEPING AWAKE THE SENSE OF WONDER IN THE WORLD.” Sources

disagree on whether those wise words belong to English writer G.K. Chesterton or Russian artist Marc Chagall. Either way, it’s an apt sentiment for a space where I spend much of my working life—the boardroom on the second floor of the Zoo’s Visitor Center.

I still remember my first time in that room. I was applying for the job I now hold and had come for an interview with several members of the FONZ Board. Our frank and honest discussion remains vivid in my mind. So does another impression: the dozen or so animal portraits gracing the walls. Before I left that evening, I asked how they’d chosen the animals.

The answer was clear and unequivocal. These are portraits of animals, I was told, that owe their survival in large part to the work of the Smithsonian’s National Zoo and its partners. The beautifully drawn images include black-footed ferrets, scimitar-horned oryx, and Przewalski’s horses—all of which went extinct in the wild and have since been reintroduced into their former habitats.

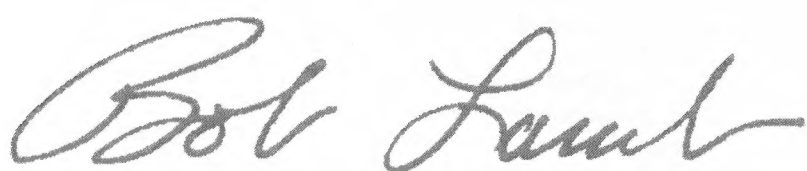
Given the Zoo’s shortage of office and meeting space, people gather in the boardroom fairly often, to get animal care updates, create policies for emergency readiness, train volunteers, plan events, and much more. That means we get regular glimpses of those majestic animal portraits. That’s fitting, I think, because those powerful pictures underscore the importance of the animal care, scientific research, and conservation efforts under way at both Rock Creek and Front Royal.

The boardroom gallery also serves as a microcosm of the Zoo itself. Just as the animal images stir wonder among Zoo and FONZ staff, reminding us of the vital focus of even the mundane details of our work, the Zoo does the same for the city and even the world. In a town where folks often can’t see past the next election, the Zoo reawakens our awareness of a world of natural wonders.

We care for and exhibit 400 diverse and often endangered species to help visitors appreciate an animal world most of us would never personally experience. We conduct tours, classes, and host lectures to deepen guests’ understanding and love of species other than our own. We make friends and draw moral and financial support to do all that we can to ensure that we slow and even reverse the decline of species.

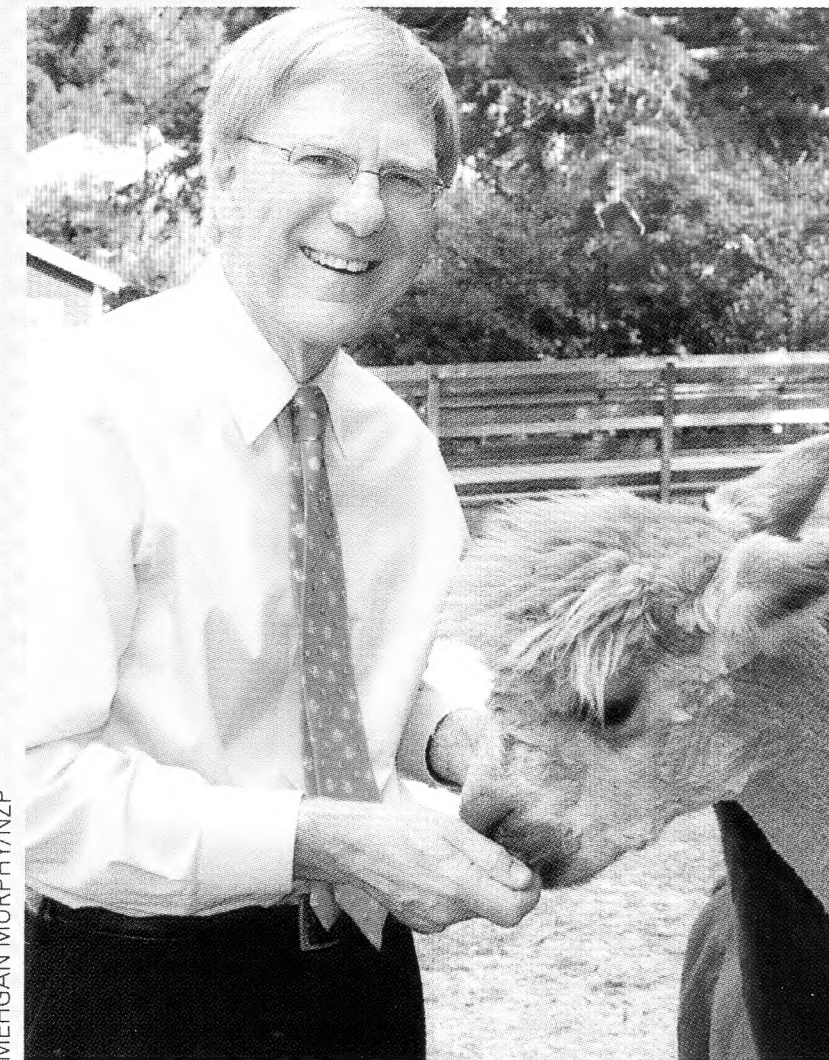
Each time I step into the boardroom, I see both the beauty of the animals and the vibrancy of the people who work as employees, volunteers, and students—all for a cause far larger than any one of us. And I see you, our FONZ members. You play a key part in supporting and strengthening the Zoo’s varied efforts, because the task at hand is too big to accomplish alone and too important to neglect. When you renew your membership this year, I urge you to take pride in your role in keeping awake the sense of wonder in the world.

Sincerely,

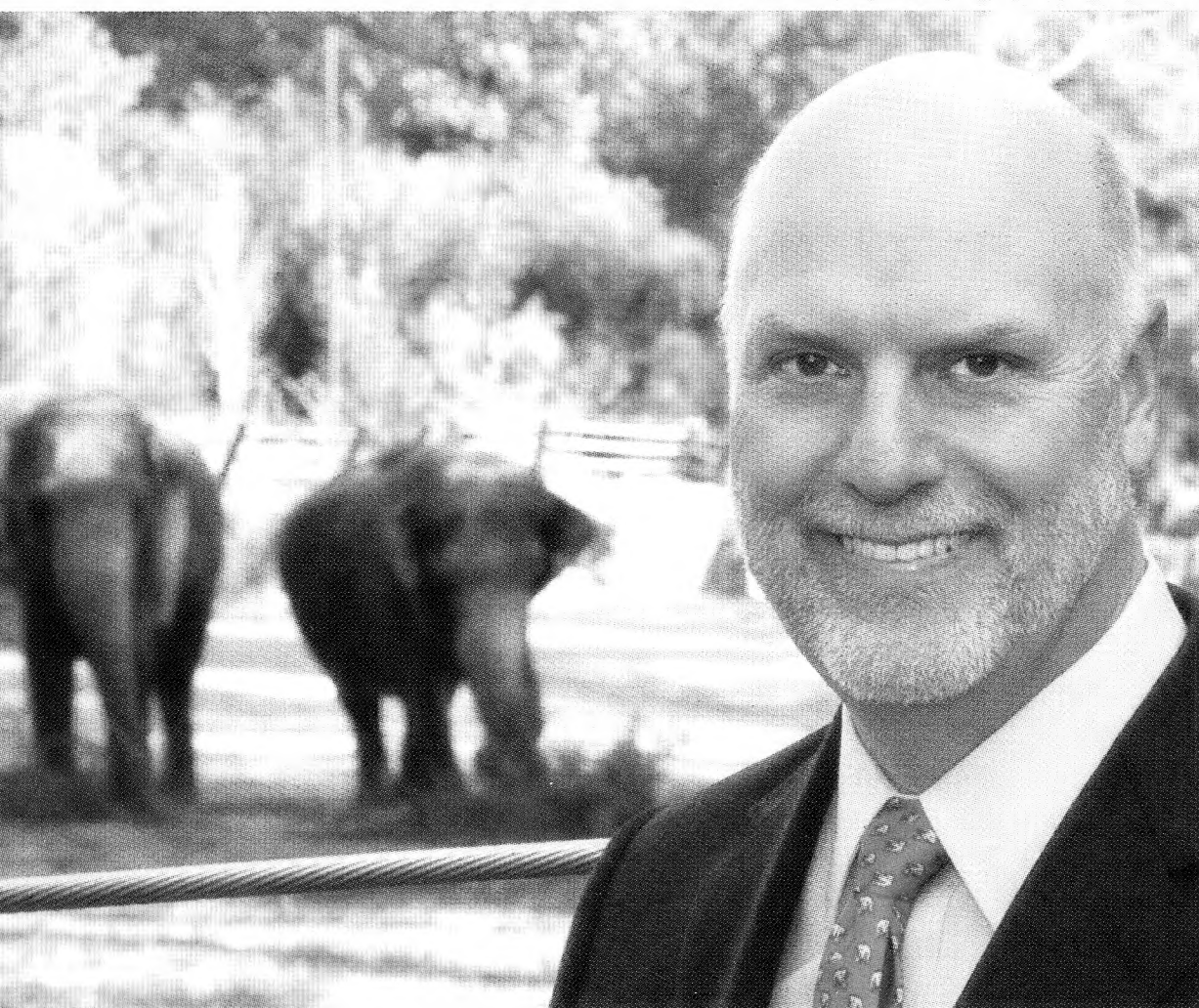


Bob Lamb

Executive Director, Friends of the National Zoo



MEHGAN MURPHY/NZP



MEGHAN MURPHY/NZP

WE'VE ALL SEEN THE CLASSIC NEW YEAR'S IMAGE OF A WEARY FATHER TIME GIVING WAY TO A BOUNCY BABY. Well, the baby showed up a little early at the Smithsonian's National Zoo, and 2013 appears to be the Year of the Bear for us.

December 13 brought the birth of Andean bear twins. Their arrival was a milestone. No North American zoo had successfully bred this vulnerable species since 2010, when Bernardo and Chaska were born here at Rock Creek. Their mother, Billie Jean, also bore the new cubs.

Aside from the cubs themselves, there was another important "offspring" of the 2010 and 2012 births—knowledge. Our animal care and reproductive science teams amassed critical expertise that we share eagerly with colleagues at other Association of Zoos and Aquariums-accredited institutions. We hope to help reverse a breeding lull among Andean bears in human care.

A week later, Hana, a sloth bear on Asia Trail, gave birth to a single cub. Found primarily in India and Sri Lanka, sloth bears owe their name to European explorers in the 1700s who thought the animals' disheveled looks and long claws were reminiscent of sloths'. The bears are classified as vulnerable to extinction, so every birth is a cause for celebration.

Our zoological family has also grown through the acquisition of animals from other institutions. You can see some of them in the "Zoo Debuts" portfolio on pages 16-21. New arrivals have particularly enriched our Cheetah Conservation Station. They include sitatungas, amphibious antelope that look almost like escapees from a Dr. Seuss book, and a pair of Ruppell's griffon vultures. The large, endangered birds have already become media stars; their appearances include a gallery at washingtonpost.com.

The Zoo's growth isn't limited to our animals. We've also been expanding and reshaping our exhibits, to improve both our residents' living quarters and our visitors' experiences. This coming spring will bring the opening of our new Elephant Community Center, which will complete our vast Elephant Trails exhibit. Housed in our historic elephant building, the center will offer our Asian elephant herd a place to gather. Its features—sand floor, splash pool, and naturalistic toys—boost elephants' opportunities to behave as they would in the wild. The intimate space will afford you the chance to see the animals up close.

None of this growth and expansion could have happened without the steadfast support of the Zoo's friends and fans—including you. So I thank you. I'm particularly grateful for the way you and other visitors have embraced our new Speedwell Foundation Conservation Carousel. Since the first riders mounted the beautiful hand-carved animals late last November, we've grossed just under \$100,000. The carousel is just one example of how we've reached out to new and varied funding sources to help us in a challenging fiscal climate.

Support from friends both new and old, coupled with the amazing contributions of our staff and volunteers, makes me confident that 2013 will be another great year of inspiring our visitors and saving species at your National Zoo.

Sincerely,

Dennis Kelly
Director, Smithsonian's National Zoological Park

Scientists Study Turkey Genes

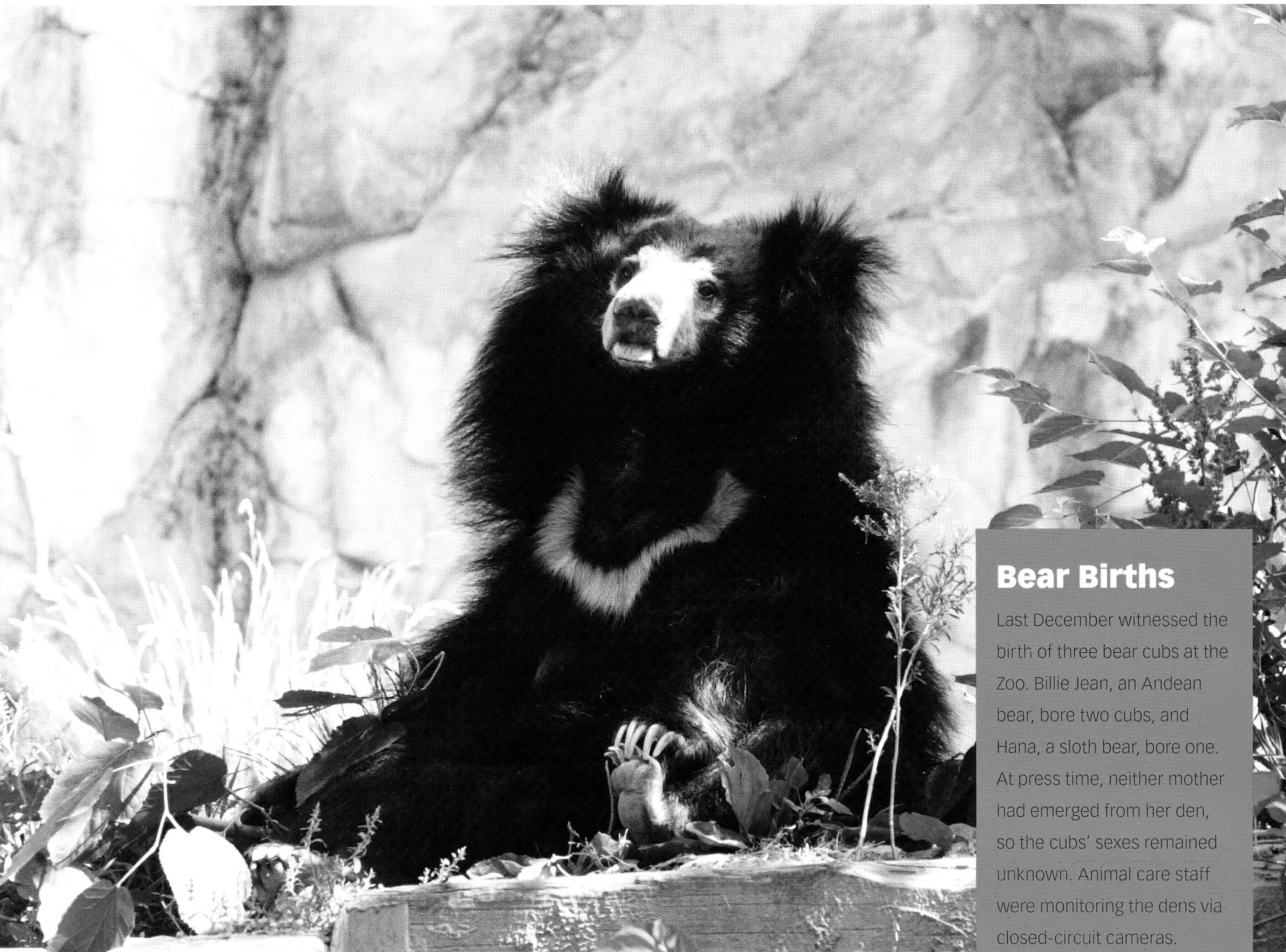


Each Thanksgiving, Americans cook some 45 million turkeys, yet the big birds in the oven are strikingly different from the wild turkeys one sees on classroom bulletin boards. Rob Fleischer, who heads the Zoo's genetics lab, and his collaborators at the U.S. Department of Agriculture (USDA) and other institutions examined the genomes of modern commercial turkeys and their ancestors.

Today's domestic turkeys exhibit far less genetic variation than their forebears, which are now extinct in the wild. Modern turkeys have also been bred to be larger and have more breast meat, likely in response to consumers' appetites.

Thanksgiving guests might be surprised to learn that the star of their all-American menu is actually an immigrant. "Few people know that the commercial turkeys served at Thanksgiving descended from Mexico, where they were discovered during the Spanish Conquest and transported to Europe," notes USDA scientist Julie Long.





Bear Births

Last December witnessed the birth of three bear cubs at the Zoo. Billie Jean, an Andean bear, bore two cubs, and Hana, a sloth bear, bore one. At press time, neither mother had emerged from her den, so the cubs' sexes remained unknown. Animal care staff were monitoring the dens via closed-circuit cameras.

Billie Jean's cubs were sired by Nikki shortly before his death last August after a year-long battle with cancer. "It is a heart-warming story that Nikki's legacy continues," says curator Craig Saffoe. "It is also a conservation success, as his genes were extremely valuable."

Hana's mate, Francois, was born at the Zoo in 1991 and returned here in 2010 after a seven-year breeding stint in Little Rock, Arkansas.

Baby Elephant Shrew

— Born in September, a young short-eared elephant shrew is enchanting visitors to the Small Mammal House. The tiny, male rodent has learned to hunt crickets, just as his parents do. (This species is noted for its voracious appetite, the result of a high heart rate and speedy metabolism.) Native to southern Africa, short-eared elephant shrews are the smallest of 17 elephant shrew species. Each animal weighs less than two ounces.



CLYDE NISHIMURA

Feline Farewell

On November 19, veterinary staff humanely euthanized Soyono, a female Sumatran tiger. She was 19 years old, and spondylosis, a degenerative disorder of the spine, had compromised

both her health and her quality of life.

Born at the Zoo in 1993, Soyono and her mate, Rokan (who died in 2010), produced three litters of genetically valuable cubs. Their offspring,

seven in total, have since gone to other zoos.

Sumatran tigers are critically endangered. Only about 400 survive in the forests of Indonesia. Another 300 live in human care.



ANN BATDORF/NZP

ANN BATDORF/NZP

Tentacled Snakes Litter

October 21 brought a delightful surprise for animal care staff at the Reptile Discovery Center: eight newborn tentacled snakes. (Unlike most snakes, this species gives birth to live young.) Despite breeding attempts, the parents had not produced viable young in four years.

Native to Southeast Asia, these aquatic snakes get their name from mustache-like tentacles on their noses. The tentacles function as sensory mechanisms, enabling the reptiles to detect vibrations from potential prey. Keepers noted that the young snakes exhibited predatory behavior within hours of birth.



BRITTANY STEFF/NZP



FRED SORENSON/USFWS

Harbor Seals Arrive at Zoo

Late last fall, two harbor seals—Squeegee and Luke—arrived at the Zoo to become part of our new American Trail exhibit. At press time, the two pinnipeds were in quarantine, a standard stop for any animals new to our collection.

A species new to the Zoo, harbor seals have the largest range of any seal. They dwell on both the East and West Coasts of the United States. Scientists estimate that nearly half a million harbor seals live in the wild. While viral diseases, pollution, habitat loss, and commercial fishing caused some decline in numbers, the species has benefited from the Marine Mammal Protection Act, and its population is currently considered stable.

Mark Your Calendar

Jan. 29 **Priority Camp Registration**
FONZ members at the Contributing (2012) or Premier+ (2013) level or higher can register at fonz.org/camps.htm.

Feb. 5 **General Camp Registration**
All members can register at fonz.org/camps.htm.

Feb. 9 **Woo at the Zoo**
Bring your sweetheart to the Zoo for drinks, snacks, and glimpses into animal “romance.” Visit fonz.org/woo.htm to learn more.

VOLUNTEER OPPORTUNITIES

Every year, hundreds of trained volunteers support the Zoo’s mission by giving their time, energy, and enthusiasm. Opportunities to help generally fall into one of three categories: Education Interpreter, Zoo Help Volunteer, or Special Event Volunteer.

Education Interpreters engage visitors about the importance of conserving wildlife and wild lands. For this crucial role, the Zoo looks for enthusiastic, conservation-oriented adults who enjoy interacting with people. The time commitment is nine hours a month for a minimum of a year along with attendance at monthly meetings. Training runs 25 to 50 hours (depending on the program) and focuses on animal behavior and interpretive technique.

Zoo Help Volunteers are adults who assist with horticulture, behavior watches, exhibit cleaning, and other needs around the park. The minimum time commitment is a year, and Zoo Help Volunteers generally work one full day each week. Shifts may be day-long (7 a.m. to 3 p.m. for keeper aides) or shorter (about three hours for behavior watchers). Training varies according to the job.

Special Event Volunteers form the backbone of Boo at the Zoo, ZooFari, ZooLights, and other wonderful events that raise funds for and awareness of the Zoo and its work. Volunteers give out candy, take tickets, dance in the snow globe as Panda Claws, and much more. The time commitment is the event itself, and training is on the job.

Interested in joining the team? We are currently seeking applications for Education Interpreters at both the Cheetah Conservation Station and Elephant Trails. Opportunities to help behind the scenes or at special events arise regularly. **Learn more by visiting fonz.org/volrecruit.htm or calling 202.633.3025.**

NATIONAL ZOO! Your membership supports the care and conservation of animals at the National Zoo and around the world. In an effort to better personalize your experience, we've restructured our membership levels. Please check out the new options to find the one that's best for you!

Birthday Parties

Children's Camps

Snore & Roar Overnights

Discount on Stroller Rentals

Parking Benefit

Free Carousel Ride Coupon(s)

Free Fountain Drink Coupon(s)

Discount Coupon(s) for Food Purchase - 10%

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Birthday Parties at the National Zoo

FONZ Photo Club (free)

Young Professional's Club (free)

SMBC Club (\$30) Smithsonian Migratory Bird Club

SCBI Club (\$30) Smithsonian Conservation Biology Institute

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Smithsonian Zoogoer Calendar

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Green, Basic, Premier, and Premier+ memberships.

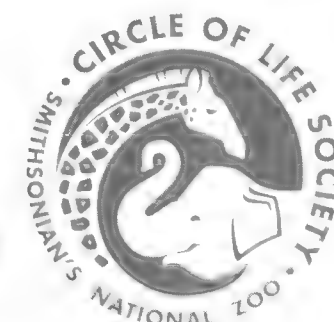
New membership pricing will take effect on January 1, 2013. If you have questions or concerns, please contact our membership office at 202.633.2922 or lonzmember@si.edu

*National members must live 200 miles or more from DC



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HOPE FOR A FUTURE. Leave a lasting legacy, one that will make a difference for generations to come. Designate the Smithsonian's National Zoo as the beneficiary of your life insurance, IRA, or will to provide support to the Zoo after your lifetime. Your gift will help ensure the ongoing wildlife conservation, education, and research programs at the National Zoo and around the world. These gifts may help to reduce income or estate taxes. Get more information today; call 202/633-3027.



Little Cats, **Big** Attitude

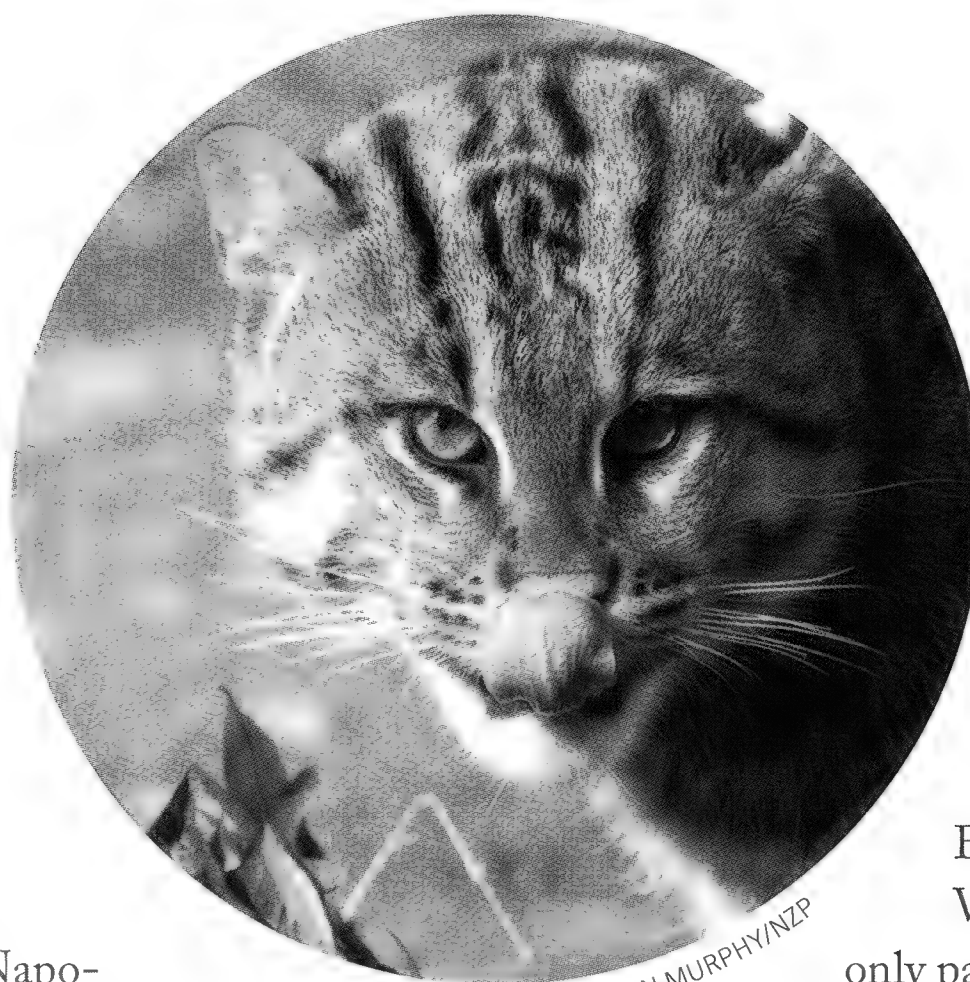
BY CRISTINA SANTIESTEVEAN

Fishing cats have the body of a bulldog, the tail of an otter, and the webbed feet of a water creature. Yet their attitude is 100 percent feline.

Never underestimate a fishing cat. It may look like an oversized house cat, weighing about 15 to 25 pounds. Its round face, squat legs, wee ears, and vibrant coat can make it seem cute, even cuddly. Don't be fooled.

"These cats, no questions asked, would kick your butt," says keeper Courtney Janney. "It's a complete Napoleonic complex. What they lack in size, they make up for in attitude. I have taken care of these cats for over three years, essentially every day. I do nothing but feed them and make their lives positive, and their first reaction to me is always to hiss and strike at the mesh."

It's not that fishing cats are mean. It's just that they're little cats in a big-cat world. They share their range in Southeast Asia with more than a dozen other cat species, including tigers and leopards. Those larger cats won't hesitate to make a meal of smaller ones. Fishing cats are tough because they have no other choice.



MEHGAN MURPHY/NZP

Born to Swim

Fishing cats get their name, distinctive body features, hunting technique, and unusual habitat from the central fact of their lives: They fish for food. These adaptable cats also hunt rodents, birds, reptiles, and amphibians. But fish are their primary prey.

Webbed feet and claws that retract only partially help these pint-size predators snag fish. Wedge-shaped heads allow for easy movement through water. Short tails provide perfect rudders.

All those adaptations add up at dinnertime. Fishing cats generally hunt from the shoreline. They watch for movement in the water, and dive in when a fish swims close by. The cats catch their aquatic quarry by snagging it with a paw swipe, pinning it against the bottom, or swimming in pursuit.

If no fish happens by, fishing cats may try to lure one by gently tapping the surface with an outstretched paw. Scientists speculate that fish are attracted by this behavior



Little Cats, **Big** Attitude

because the resulting ripples mimic those that would be made by an insect on the surface of the water. No other cat species hunts quite like this.

“Jaguars and tigers and some other felid species like the water, but fishing cats are one of few species that will dive in head-first and swim down to catch a fish,” says

Jilian Fazio. A former Asia Trail keeper, she is now a doctoral student at George Mason University and a Smithsonian Fellow. “It’s a unique behavior, and really impressive to see.”

Fishing cats’ relationship with water extends beyond dinner; it defines their entire distribution in the wild. Although

scientists believe the cats’ range stretches from Pakistan to Vietnam, the animals are absent from much of the land within that large area. Instead, these cats concentrate their populations around rivers, streams, and wetlands.

“Their biggest conservation issue is water pollution,” says Janney “They’re a great



JESSIE COHEN/NZP



JESSIE COHEN/NZP



MEHGAN MURPHY/NZP

example of an indicator species. If fishing cats are around, that's a really good sign that their habitat is not polluted."

In Hot Water

Unfortunately, fishing cats are around in fewer and fewer places, and scientists classify them as endangered. Water quality is declining throughout Southeast Asia as a burgeoning human population generates more pollution.

When water quality plummets, a domino effect ripples through the ecosystem. First the smallest and most vulnerable invertebrates disappear. Then amphibians and fish begin to suffer from a combination of polluted water and declining prey populations. Finally, with nothing left to fish for, fishing cats abandon the habitat.

A key factor has been the growth of shrimp farms. Often compared to slash-and-burn agriculture, commercial shrimp farms occupy the same wetlands that fishing cats rely upon for food and shelter. Because the farms are meant to be temporary, their owners do not bother managing water quality.

After a few years of intensive aquaculture, the shrimp farmers move on. In their wake, they leave a trail of pollution and environmental devastation. When shrimp farmers move into an area, fishing cats and countless other wild species have no choice but to abandon what had been their home.

Feisty Family

Fishing cats' plight in the wild raises the stakes for zoos working to conserve them. Yet the cats are even rarer in human care than in nature. Of the 223 institutions accredited by the Association of Zoos and Aquariums (AZA), only 18 are home to fishing cats. The total population adds up to just 34 animals, five of which are at the Smithsonian's National Zoo.

The reason for fishing cats' scarcity in American zoos is simple. These feisty felines are incredibly difficult to breed. In order to produce kittens, a male needs to spend a little time with a female. Trouble is, fishing cats don't seem to care for company very much. Scientists believe wild fishing cats lead solitary lives, coming together only when the female is ready

to breed. Even then, a clash often erupts. "As with all felids, there's always aggression," says Fazio. "Even in the wild, when they come together, they're going to be aggressive."

Fishing cats' pickiness about mates poses a particular challenge for zoo breeding. Potential partners are selected by the fishing cat Species Survival Program (SSP), which is managed by the AZA. Experts seek to pair genetically unrelated individuals. The goal is to minimize the risk of inbreeding and maximize the genetic health and viability of the zoo population. The SSP team considers factors such as age

DID YOU KNOW?

A fishing cat's short tail is an example of an evolutionary trade-off. It makes a great rudder for swimming, but it can't provide much balance when the cat climbs. Fishing cats, explains keeper Courtney Janney, "sacrifice a lot of climbing abilities in order to be better adapted to the wetlands."

and genetics when making breeding recommendations, but the most important variable—the compatibility of the two cats—is impossible to predict.

The question of compatibility played out here at the Zoo in recent years. According to SSP recommendations, Electra (a female) was paired with Viper (a male) several years ago. But the two never got along. In fact, their animosity was so great that they were never trusted to be alone together. Needless to say, no kittens resulted.

In 2011, Lek (a male) arrived at the Zoo as a new SSP-recommended beau for Electra. Not quite two years old at the time, he was just entering reproductive maturity. Electra, meanwhile, was already six. Female fishing cats typically stop breeding sometime before their tenth

birthday. If Electra and Lek did not accept one another, Electra's chances for kittens might be lost forever.

"Electra rules the roost," says Janney. "The first time we put them together, she showed him who was boss." The problem with that first introduction may have been many things: Lek's youth, his recent arrival at the Zoo, Electra's negative experiences with Viper, or something entirely different.

Whatever the trouble, the keepers tried again a month later. Success! "It's such a great relationship," says Janney "It's so nice to see. They play together. They groom each other. They sleep together." Last year, Electra gave birth to two kittens: Namfon (a female) and Cutter (a male). They were the first of their kind successfully born and raised at the Zoo.

Fishing for Answers

Namfon and Cutter were two of only three fishing cats born at any AZA facility in 2012. That's above average for the population in human care. It usually grows by just two kittens a year.

Fazio hopes to accelerate that growth rate. She is two years into a three-year study that combines behavioral observations with hormonal analysis of male and female fishing cats. Her goal? To improve the odds for zoos that hope to breed their fishing cats.

Fazio's "primary question," she says, is why some fishing cats are compatible while others are not. "Is it a personality difference? Is it the way they're managed? Is it the space they have? Is it the number of keepers they have, or the consistency within the keeper staff? Is it their diet? These are all the different variables I'm looking at. Enrichment, training, diet, indoor enclosures versus outdoor enclosures—all those factors. And then the personality assessments done by the keepers."

In Viper's case, Fazio suspects his kittenhood may be an issue. Unlike Namfon and Cutter, Viper was hand-raised. Fazio believes this may have affected his ability to relate well with other fishing cats. As of now, there are no firm data to support this theory. With luck—and a great deal of data analysis—Fazio may soon be able to answer

Little Cats, **Big** Attitude

DEADLY GAME OF CHICKEN

Despite their prowess as anglers, fishing cats are adaptable predators. In undisturbed habitats, they augment their fish-based diet with rodents, birds, reptiles, and amphibians. When they find themselves living next door to humans, fishing cats readily expand their diet to include chickens.

The results are predictable. When fishing cats are suspected of killing chickens, the birds' owners seek out and kill fishing cats. "They set traps and snares and poison out in the wild," says researcher Jilian Fazio. "It's really alarming, the number of dead fishing cats."

A solution exists. Researchers are working with locals to build stronger chicken coops. If the fishing cats cannot get to the fowl, they will not be able to kill them. This, everyone hopes, will translate to fewer revenge killings throughout their range.



MEHGAN MURPHY/NZP

this and other questions about fishing cat reproduction.

Meanwhile, Viper remains a bachelor. Electra and Lek were separated during the summer so that Electra could raise her kittens. But the happy couple has been reunited for the winter. Come spring, they will hopefully delight Zoo staff and guests with a second litter of kittens.

Zoo Successes, Wild Hopes

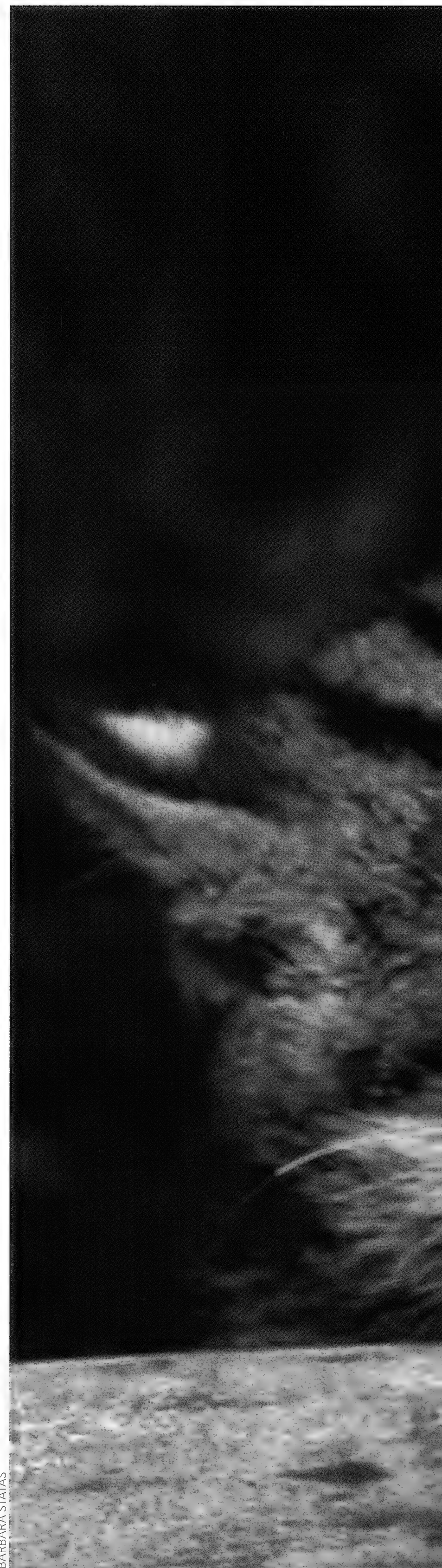
Namfon and Cutter remain at the National Zoo. Animal care staff recently moved them to their own enclosure after conflict erupted between the generations. In time, the two kittens will likely move on to other zoos, where they will be paired with unrelated fishing cats in the hope of producing more kittens.

Fishing cats' success in human care is essential, because life in the wild has become increasingly difficult. Over the past two decades, the wild population of fishing cats has been cut in half. The cats may have already disappeared entirely from some of the forests and wetlands where they once prowled. "There are all these areas in India and Sri Lanka and Thailand where people used to see fishing cats, and now they don't," says Fazio. "Extinction is definitely a concern."

There are no immediate plans to introduce zoo-born fishing cats into the wild. That may change if wild populations continue to plummet. "That's the main goal of all these zoo populations," says Fazio. "Not only do they help educate the public and act as ambassadors for their wild counterparts, they also serve as a hedge against the extinction of their species."

Fishing cats are tough. But they are no match for the dual threats of habitat destruction and eradication efforts by people who fear the cats will prey on their chickens (see sidebar). These small, spotted cats need human help. And they're getting it. From zoos in North America to forests in Southeast Asia, animal care and conservation experts are working together to save these little cats with a big attitude. **SZ**

—CRISTINA SANTIESTEVEAN is a freelance wordsmith and photographer.



BARBARA STATAS





ZOO Debuts

BY ANNE GODDARD

**BIRTHS, HATCHINGS, AND
ACQUISITIONS FROM OTHER ZOOS**
added a variety of new stars to the
Zoo's cast of characters last year.
Meet a few of them here.

M. R. VAN BERGH



HAPPY HOMECOMING — Four California sea lions, all females, have been delighting American Trail visitors since the fall. The two eldest, Calli and Summer, are Zoo veterans who sojourned in Pittsburgh while their home was rebuilt. While there, Calli gave birth to Sophie, who has joined her mother in D.C. The fourth animal, Sidney, also came from Pittsburgh.

ZOO Debuts



BARBARA WATKINS/NZP



BARBARA WATKINS/NZP



JESSIE COHEN/NZP

SUMMER SURPRISE— Last July, the Zoo celebrated the hatching of two Cuban crocodiles—the first young of this critically endangered species to hatch here successfully since 1988. Genes from their wild-born mother had not previously been represented in the population in human care, making the two young reptiles especially significant.

IN THE RED?—

"Scarlet fever" swept the Bird House this past fall with the hatching of two scarlet ibis chicks. Native to the wetlands of South America, the birds are actually black when they emerge from the shell. They turn scarlet by their first birthday.



JESSIE COHEN/NZP



MEHGANI MURPHY/NZP

TWO-FOALED INCREASE— Scientists and keepers in Front Royal welcomed the birth of two Przewalski's horses this past fall. The foals, one male and one female, will join the Zoo's herd of 25 individuals. Never tamed, Przewalski's horses went extinct in the wild but have now been reintroduced to their native Mongolia.

NEVER BEFORE— Acrobatic and intelligent, the four ravens gracing our new American Trail are the first of their species to join the Zoo's collection. The male, Chogan, was rescued from the wild after he injured his wing. A raven's wingspan can be almost four feet wide.



MARK VAN BERGH

ZOO Debuts



SHADES OF GRAY—

Largest of all canines, gray wolves come in a variety of hues, from white to black. You can see this in the two females on American Trail. Crystal is white; Coby is gray and black. They are the first of their iconic and controversial species to live at the Zoo.



NOTES FROM UNDERGROUND— Last May, a pair of burrowing owls hatched at the Bird House. Slightly larger than robins, the birds get their name from dwelling underground, usually in tunnels dug by squirrels, prairie dogs, or other small mammals. The chicks are genetically valuable additions to the population in human care.

JIM AND PAM JENKINS

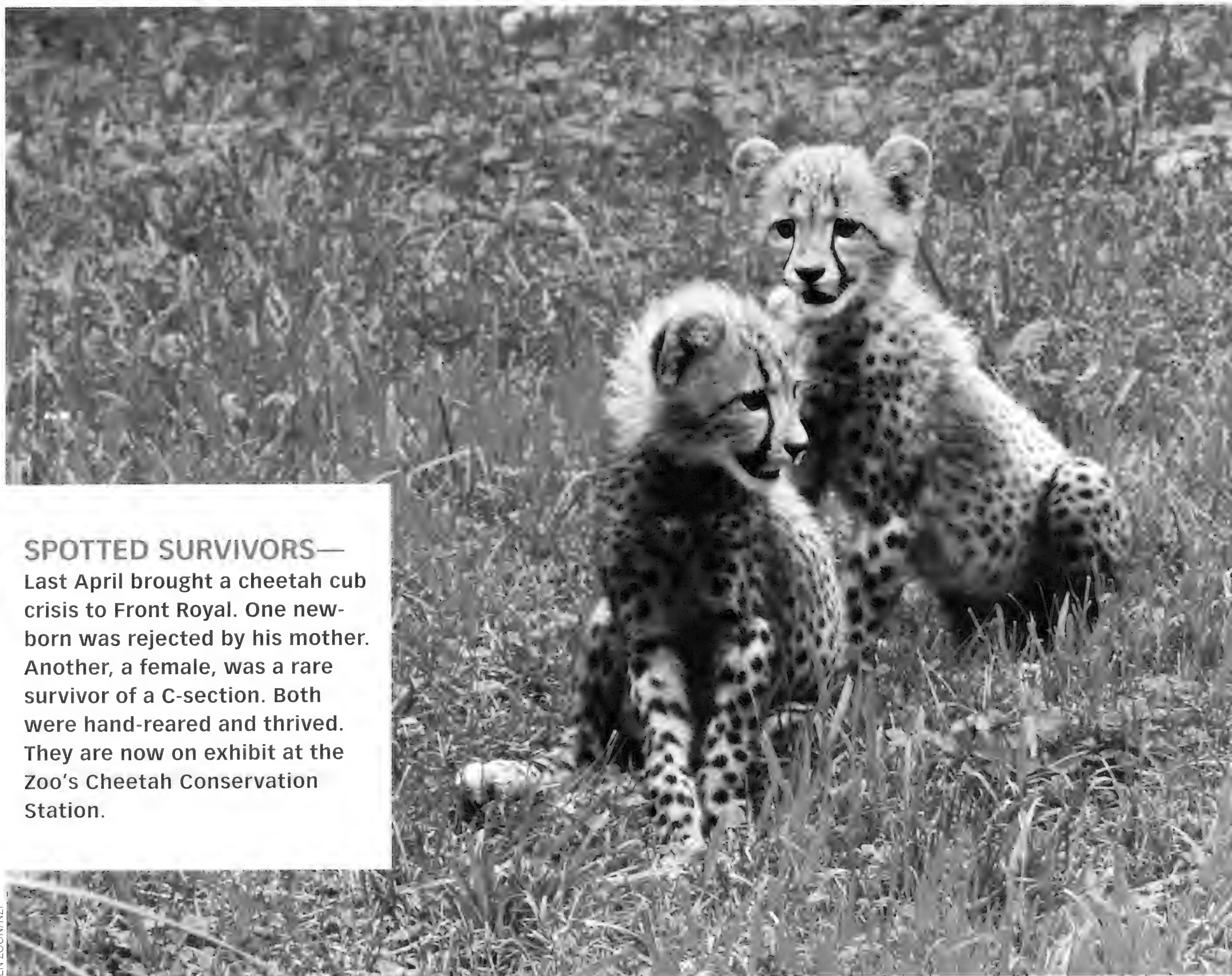
MYSTERY MONKEYS

Tiny and timid, Goeldi's monkeys are difficult to observe, let alone study, in the wild. Scientists still puzzle over many aspects of their anatomy and behavior.

Native to South American rainforests, the one-pound primates are classified as vulnerable to extinction. They recently returned to the Amazonia exhibit.



PAM JENKINS



SPOTTED SURVIVORS—

Last April brought a cheetah cub crisis to Front Royal. One newborn was rejected by his mother. Another, a female, was a rare survivor of a C-section. Both were hand-reared and thrived. They are now on exhibit at the Zoo's Cheetah Conservation Station.

MARK VAN BERCHE

JEN ZOON/NZP

Milk doesn't just feed young mammals. It carries important signals from mothers to babies.

Milk: MEALS & MESSAGES

BY WILLIAM LAZARO



MEGAN MURPHY/NZP



ANN BATDORF/NZP



MEHGAN MURPHY/NZP

You are what you eat. We've all heard that. Yet for mammals, eating is secondary. What sustains us in our earliest, most vulnerable days and even defines us as a class of animals is what we drink—namely, milk. Indeed, the word “mammal” refers to our dependence on secretions from the mammary glands.

“A few species of birds, fish, and amphibians also produce secretions for nourishment, but lactation is the absolute definition of what a mammal does,” says Michael Power, an animal scientist for the Smithsonian Conservation Biology

Institute (SCBI). “It is a fundamental adaptation of mammals and something that we’re learning more about every day.”

Our First Food

Young mammals depend on milk for nutrition because they can digest little else. Nursing also helps the mother provide optimal nutrition with only a modest expenditure of energy.

Despite the diversity of mammals, milk generally contains certain common elements, including water and a combination of fat and sugar. (Milk can either be high in sugar or high in fat, but never in both.) Milk also provides

Milk: MEALS & MESSAGES

protein, minerals, vitamins (except vitamin D), immune factors (which help build the body's defenses), growth factors (which regulate cellular processes), and metabolic hormones.

The exact ingredients in a batch of milk differ widely across species. Variations occur even among individuals of the same species. Such differences in milk composition form the focus of one of Power's research projects. He has examined the milk of Asian elephants, discovering that its composition can vary not only by individual but among samples from the same animal. As a calf gets older, its mother's milk gets higher in fat and lower in sugar.

A key tool for Power's work is the Zoo's Milk Repository: a collection of 13,000 milk samples from more than 150 species. It's constantly being updated. "One of the most important sets of samples," says Mike Maslanka, the Zoo's nutrition chief, "is those from Mandara," a western lowland gorilla. "Keepers and nutrition staff have collected a milk sample from her weekly since she gave birth in early 2009. This provides a comprehensive set of milk samples from birth through weaning, giving us a look at the nutrient content changes in the milk during that period."

Mandara's samples can help Power and other scientists explore how the components of milk change in gorillas over time. That's just one example of how the collection boosts researchers' understanding of lactation physiology. The Milk Repository also

serves another vital function: It helps Zoo staff develop species-specific formulas for animals that need to be hand-reared.

Milk as Messenger

Beyond feeding young mammals, milk plays an often overlooked role in biochemical signaling—the transmission of "messages" from parent to child. These milk-borne instructions cue certain of the young animal's cells to grow and mature at particular points along a complex process.

One such message bearer is a molecule called epidermal growth factor (EGF). It aids in the development of the digestive tract. For human infants, EGF can also reduce inflammation within the digestive tract and prevent intestinal tissue from dying.

Reptiles and birds also engage in biochemical signaling, but they must put all their biochemical information into the egg. Once the egg is laid, signaling ceases. Only mammals, thanks to their milk, can continue sending signals to their young after birth. This allows significant growth and development to continue outside the womb.

The extent and speed of that growth varies by animal. It also correlates, Power notes, with "the amount of time that a species lactates. Hooded seals develop much faster and lactate for a much shorter period of time than, say, gorillas. This suggests that milk is an integral part of development." Power is researching precisely how milk acts as a biochemical signaler in hopes

of identifying the messages that tell the offspring to grow and develop.

Mixed Blessings

In addition to aiding in development, certain milk-borne molecules affect the health of infants. Researchers have determined that milk can pass a mother's health history to her offspring, especially in humans. "A mother's disease resistance can be inherited," Power says. "Mothers who receive flu shots during pregnancy, for example, will pass resistance to that particular flu strain on to their children through their breast milk."

Not all signaling molecules benefit the infant, however. Lactation may make offspring more susceptible to certain diseases, such as diabetes. Research is prompting new looks at conditions traditionally attributed to genetics and poor nutrition.

In one study, researchers bred two groups of mice. One mother had a genetic propensity for obesity; the other did not. The scientists swapped the offspring, so that each mother nursed the other's young. "Offspring without a propensity for obesity that received milk from a mother with a propensity for obesity became obese," Power says. "This suggests that while genetics matter, nurture also has a considerable role to play."

Similarly, Power's 2011 research on rats found that alterations in milk composition during the early postnatal period might contribute to long-term changes in body weight. A mother's prenatal stress or high-fat diet appeared to induce these changes. The mechanism for exactly how this happens, however, remains unclear.

Power's Pencil

Power and other scientists continue to tease out the nuances of lactation, identifying the ingredients in different species' milk and exploring how those components affect offspring, both positively and negatively. Countless details remain to be penciled in, but the big picture is clear: Milk, the life-giving fluid that makes us mammals, is truly a meal, a messenger, and a marvel. **SZ**

—WILLIAM LAZARO *was an intern in the Zoo's office of communications.*

Another Mother's Milk

Humans are unique among mammals in that we keep drinking milk long after we've been weaned and regularly imbibe the milk of other species (generally cows). The calcium in cow's milk promotes stronger bones and teeth in adolescents and may help prevent osteoporosis in the elderly.

Before six months of age, however, human infants' immature intestinal tracts have a reduced ability to digest the proteins in cow's milk and a greater propensity to absorb the proteins whole into the bloodstream. The immune system identifies the proteins as foreign invaders and then forms antibodies to defend against them. This can lead to a milk allergy later in life and may also contribute to asthma, though the precise connection is yet unknown.

ZOOGOER HIGHLIGHT

BEAST BITS

Tamarin Togetherness

Golden lion tamarins are small monkeys native to the coastal forests of Brazil. Each animal weighs about a pound. These monkeys live in groups with two to nine members. When babies, usually twins, join the group, everyone pitches in to help rear them, carrying the young on their backs. Adult males are the main babysitters. Mothers take the babies only to feed them. ***You can marvel at these monkeys at the Small Mammal House.***

JESSIE COHEN/NZP



Family Farming

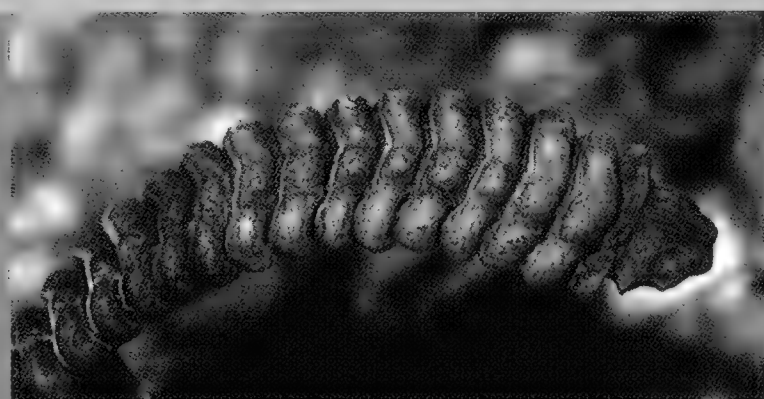
Leaf-cutter ants live in huge families called colonies. A colony may have a million members, each of whom is a child of the same queen. The ants have different jobs, generally related to farming. Some leave the nest to gather leaves. Others take the leaves, chew them into mush, and then use the mush to grow fungus. The fungus serves as the ants' food. ***You can see a leaf-cutter ant colony in the Invertebrate Exhibit.***



MEHGAN MURPHY/NZP

Zoo Clue

When this animal alarm goes off, smart critters move away. Learn more at nationalzoo.si.edu/goto/zooclue.



JESSIE COHEN/NZP





Pretty in PINK

Flamingos' eye-catching color makes them stars of the bird world.

But do you know the big birds' secret?

BY OLIVIA REYES-BEJERRA

**CREATURE
FEATURE**

34

LARGE but Light

American flamingos are big birds! They can grow five feet tall and have a wingspan of 55 inches. Yet each bird weighs only five to six pounds. You can find wild American flamingos in Central and South America and on islands in the Caribbean Sea. The birds are also known as Caribbean or greater flamingos.

Water WORLD

American flamingos flock to warm, shallow lagoons and lakes. They stand in the water, balancing on the muddy bottom with their webbed feet. Or foot. The birds often stand on one leg, pulling the other up toward their bodies. Scientists are still exploring the reasons for this behavior.

PINK Power

Flamingos' favorite meals include algae, mollusks, and brine shrimps. Eating can get a bit messy in the water, so the bird's wide bill helps it filter out water and trap food. The flamingo's diet gives the animal its bright pink color. When they first hatch, flamingo chicks are gray!

Flamingo FAMILIES

Males and females pair up to build nests out of mud. The female then lays a single egg. Both parents take turns sitting on the egg to keep it warm. Thirty days later, the egg cracks open, and out comes a chick. It stays with its parents for just ten days. The chick then leaves to join other chicks in the flamingo equivalent of preschool. Adults in the flock look after the young birds.

HONKING in Flock

American flamingos are a noisy bunch. From nasal honking to growling, these loud-beaked birds have quite the musical range. Chicks learn early on that specific calls are associated with certain behaviors, especially when it's Mom calling!

At the ZOO

Fly on over to the Bird House to be tickled pink by our flock of flamingos.

YOUR TURN Family Value?

Golden lion tamarins, leaf-cutter ants, American flamingos, and Asian elephants all live in groups. Yet many other animals spend their lives alone.

Can you think of **3** advantages of living together?

Then **3** of going solo?

Share your thoughts with us at zoogoer@si.edu.



Jumbo Job

Tony Barthel is a curator at the Smithsonian's National Zoo. He's in charge of the Elephant Trails and Cheetah Conservation Station exhibits. He looks after animals—and a lot more.

Being a Zoo curator isn't all animals, all the time. "That's a common misconception," Barthel says. "There is a lot of project oversight and administrative work involved, but I enjoy it all." Barthel's job includes overseeing the animal keepers in his areas, ensuring that the animals have the best homes possible, and helping everything run smoothly.

Home Improvement

One of the biggest parts of Barthel's work has been taking part in the creation of Elephant Trails, a huge new home for the Zoo's largest animals. "When I arrived ten years ago," Barthel says, "Elephant Trails planning was already under way, so it's been really exciting to see it come to fruition."

Elephant Trails, Barthel explains, gives the Zoo room for a herd of elephants of different ages. That's important because it's how elephants live in the wild. The Zoo constantly strives to make its animals' lives as natural as possible.

A key part of the new habitat will be the Elephant Community Center, slated to open this spring. It's designed to be a great indoor hangout for the gray giants. Barthel says, "There will be big trees that they can push around, a splash pool, and toys. The sand floor will feel very natural to them, so that is where they will gather."

Boyhood Beginnings

Barthel's career began with his youthful love of the outdoors. As a teen on the Pacific island of New Guinea, he loved seeing elephants and other animals in the rainforest. "That's why I got into the field," he says.



MEGHAN MURPHY/NZP

"Because I spent so much time outdoors when I was younger."

Barthel encourages today's young animal lovers to do two things. The first is to focus. "In this day and age," he explains, "it takes a deliberate approach to enter this field from early on." The second is to study science: "biology, ecology, animal science, wildlife science, even psychology."

After that, Barthel recommends starting with a small organization where one can gain experience and identify special interests. He followed that path himself, working at a small park and then moving to a larger zoo.

Barthel then landed a position on the team that launched Disney's Animal Kingdom. He helped plan and build exhibits in the park. He also gathered animals from other parks and zoos to come live at Disney. "It was a fantastic experience and such a wonderful place to grow and learn," he recalls.

Inspiring Others

Barthel hopes Elephant Trails will inspire kids who share his interest in wildlife. "There's something special," he says, "about seeing, smelling, and hearing animals in person. Many curators will tell you: It was their first animal encounter that ignited their lifelong passion." Following that passion is important, he believes. "It can have a tremendous impact on the natural world."

— Ashley Hardaway

FONZ

2013 SUMMER CAMP GUIDE

A wild week of nature exploration for children entering grades K-7

Summer Safari campers at the Smithsonian's National Zoo explore the lives, habitats, and conservation of animals around the world. Weeklong sessions include exciting hands-on activities, craft projects, science experiments, and walks through the Zoo (but no direct contact with animals). Summer Safari Day Camp is accredited by the American Camp Association.

AGES: Camp sessions are grouped into four levels: K-1, 2-3, 4-5, and 6-7. Day camp is not offered at the pre-K level. Children should be registered for the grade level they will be entering in the fall, and they may only be registered within their correct age group.

DATES/TIMES: Camps are offered from June 17 to August 9. Weeklong sessions are held Monday to Friday, 9 a.m. to 3 p.m. Campers must be dropped off between 8:45 and 9 a.m. A limited number of spots are available in After-Camp Care, offered in the Visitor Center classrooms from 3 to 6 p.m.

WHERE: For your convenience, drop-off for all camps is in the Visitor Center auditorium. After gathering with their teacher and classmates, campers will be led to their classroom at one of several locations in the park. Please pick up campers in Parking Lot A. Participants in After-Camp Care must be picked up at the Visitor Center classrooms.

FEES:

Five-day Sessions

9 a.m.-3 p.m. sessions:

Non-Members: \$470

Members: \$375

Four-day Session (July 1-3, 5)

9 a.m.-3 p.m. sessions:

Non-Members: \$375

Members: \$300

MEMBERS: Use coupon code SLOTHBEAR2013 when registering to secure the member rate.

NEW! BEFORE-CAMP CARE:

Available from 8 to 8:45 a.m. Cost is \$100 per session (or \$80 for the four-day session).

AFTER-CAMP CARE: Available from 3 to 6 p.m. An additional fee will be charged after 6 p.m. Cost is \$175 per session (or \$140 for the four-day session).



AROUND THE WORLD Week 1: June 17-21

>> ENTERING GRADES K-1

International Monkey Business

Have a ball! Get to know your animal cousins, from little monkeys to great apes! There will be plenty of monkeying around in this class as we travel from jungle to jungle learning about our fellow primates. (formerly Monkey in the Middle)

Longitude and Cattitude

The Zoo is always purring with excitement. Come meet our lions, tigers, cheetahs, and more. Then learn about your favorite felines through Zoo walks, science projects, and purr-fect crafts.

>> ENTERING GRADES 2-3

Wilderness Explorers

Suit up for an adventure as a Zoo Wilderness Explorer. Earn badges as you help animals at the Zoo and around the world. You may even discover the creature of Paradise Falls. Adventure is out there!

Out of Africa There's no need for a passport when you can explore the savanna at the National Zoo. Take part in crafts and games as you learn about African animals and culture. We're not lion: It's going to be a wild time!

U.S.A. (United States of Animals)

This land was made for you and me...and the animals! Explore the Zoo in your backyard and say "hello" to your neighbors on the new American Trail including gray wolves, sea lions, and the iconic bald eagle. Then learn how you can help keep America beautiful.

>> ENTERING GRADES 4-5

World Safari

What kinds of animals live on Africa's savanna or in a North American forest? Traveling at the speed of a continent a day, you may be surprised at the fascinating animals you'll encounter along the way. Passports not required!

FONZ

FONZ RESOURCES

fonz.org

Member/Donor

Information

202.633.2922

Special Events

202.633.4470

Camps and Classes

202.633.3024

Volunteer Services

202.633.3025

Comments? Questions?

Please email us at
member@fonz.org

Not a FONZ
member yet?

Call 202.633.3034

or go to
fonz.org/join.htm

Amazon Adventure

Bom dia! We're headed on a South American adventure. Spend a week in the rainforest and get face-to-face with some of the world's most intriguing creatures, such as monkeys, frogs, and giant fish. Go high in the canopy and down to the forest floor on a wild trip that you'll never forget.

>> ENTERING GRADES 6-7

Jr. Marine Biologist

Marine biologists dive deep to investigate the animals that live underwater. "Sea" for yourself through in-depth scientific experiments in the classroom. Meet the Zoo's otters, octopus, turtles, and more—plus some of the experts who keep them afloat.



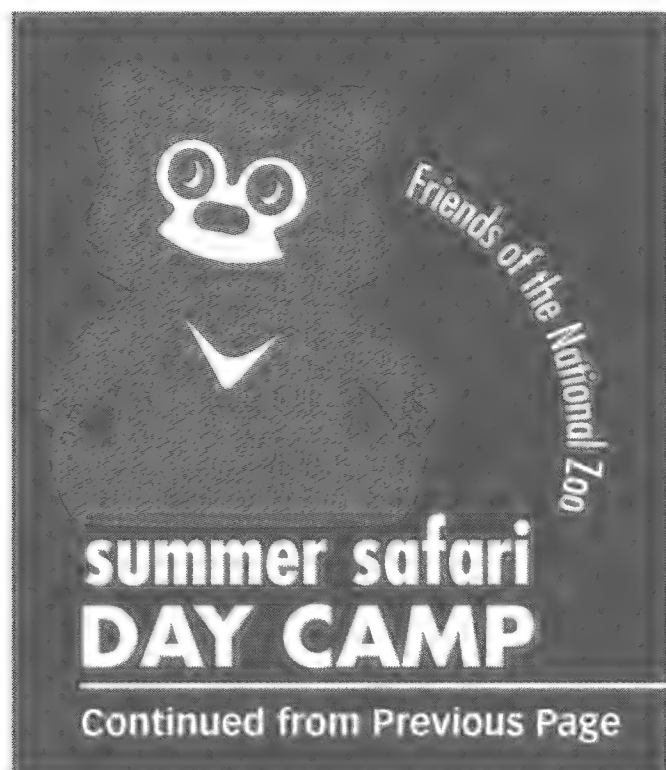
Registration begins February 5 at 10 a.m. To register, go to fonz.org/camps.htm. Space is limited.

Upgrade to Premier+ membership and register for camp one week early, starting January 29.

All confirmation materials will be sent via email upon registration.

FONZ

2013 SUMMER CAMP GUIDE



LIGHTS, CAMERA, ANIMALS
Week 2: June 24-28

>> ENTERING GRADES K-1

Over the Hedge Discover the Zoo in your backyard. We're digging up a good time discovering animals that live a bit closer to home. Learn about our feathered, furry, and swimming friends, then head out into the park to welcome your new neighbors, the critters of American Trail.

Ice Age Extinct species have left their mark in modern animals. See the ancestors of Manfred, Sid, and Diego and explore evolution as we discover today's dinos. No bones about it! You'll saber every minute of this camp! Register now, before spots go extinct. Includes a trip to the Natural History Museum.

>> ENTERING GRADES 2-3

Kung Fu Panda Help kick extinction! Become a part of the Furious Five and earn a black belt in conservation. Travel Asia Trail and uncover the mystery of the giant panda, clouded leopard, red panda, and more. This camp is sure to be a knockout!

The Lion King It's time for the mane event! We're beaming with pride over our lions. Learn about the kings and queens of the National Zoo and visit with their cat cousins: cheetahs, tigers, and leopards. Pounce on this camp. Register meow!

>> ENTERING GRADES 4-5

Dr. Zoolittle Imagine what it takes to care for a toothy tiger or a slimy salamander. How do you x-ray a stingray or give a shot to a shrew? Zoo veterinarians have one of the toughest jobs around. Visit the Zoo's animal hospital and meet the vets who care for our over 400 different species of animals. (Formerly known as ER: ZooMD).

The Lorax The National Zoo is a leader in saving endangered species like giant pandas, Asian elephants, and clouded leopards. Meet experts in the field of animal science and species survival, and discover the important work they do. Then learn how you can "speak for the trees" and defend animals from the Oncler. (Formerly known as Race for Conservation.)

>> ENTERING GRADES 6-7

Twilight As the sun sets, a wolf howls, lemurs swing, and alligators hunt. Study the wonder of crepuscular animals—those who are active at dusk and dawn—and learn about the adaptations that help them survive. Then decide. What team are you on?

THE ANIMAL KINGDOM
Week 3: July 1-3, 5

>> ENTERING GRADES K-1

Small Wonders These animals may be teeny, but that doesn't mean they aren't tremendous fun! Meet the Zoo's small mammals and learn why great things come in small packages. (Formerly known as Lifestyles of the Small and Furry).

Birds of a Feather Everybody knows that bird is the word; now find out why. Explore the world of our high-flying friends, then go for a bird watch to see some for yourself! Everyone will be flocking to this program. Don't miss out!

>> ENTERING GRADES 2-3

Moo at the Zoo Spend the week as Old MacDonald. Meet a keeper and plow headfirst into learning how we care for cows, goats, donkeys, and more at the Kids' Farm, sponsored by State Farm.

Great to be a Primate You'll go ape in this class! Learn all about our primate cousins: monkeys, apes, and prosimians. Meet the Zoo's collection and learn why it is great to be primate.

Fantastic Frogs It can be easy being green, and we'll show you how. Jump to it and learn what you can do to save the frogs. You'll be hoppy in this class!

>> ENTERING GRADES 4-5

Calling All Cats Looking for a camp with cattitude? Hunt with lions, pounce with tigers, race with cheetahs, and leap into fun with clouded leopards. Meet all of the Zoo's favorite felines and learn what you can do to protect them. We're paw-sitive you'll agree. This camp is purr-fect!

No-Bone Zone More than 90 percent of Earth's animals do not have bones. Loosen up and discover the incredible diversity of animals that belong in the no-bone zone.

ZOOMAGINATION
Week 4: July 8-12

>> ENTERING GRADES K-1

Nur-Zoo-ry Rhymes Dogs, spiders, and piggies, too. Where can you find them? At the National Zoo! You're sure to have a fabulous time making crafts and reading rhymes! So come to the park and take a look and meet a character from Mother Goose's book!

FantaSEA You don't need a swimsuit to learn about the amazing aquatic world. Hold your breath as you meet the Zoo's wettest friends. From playful otters to a curious octopus, learn about many creatures that inhabit the world's waters.

>> ENTERING GRADES 2-3

Zoo Dunnit Grab your binoculars and venture through the Zoo to solve clues about the animal kingdom. Test your newly acquired knowledge of Zoo animals and scientific methods to solve the mystery and claim the reward!

Fairy Tails We're jumping into the pages of our favorite "tails." Meet Jack's giant (octopus), huff and puff with the big bad wolf, pucker up to frogs, and pay a visit to the home of our three bears. Become a part of the story and learn about the real animals behind the critter characters.

>> ENTERING GRADES 4-5

Mythical Creatures Centaurs, dragons, and unicorns can all be found at the National Zoo (all you need is a little imagination). Take a magical journey with the fantastic creatures from the world's legends and myths and visit the real animals behind the mysteries.

Things That Go Bump in the Night Who is stirring when the sun goes down? Come meet the animals that lurk in the shadows and learn about their nocturnal adaptations. After night falls, they hunt, work, and play until it's time for us to start the day.

>> ENTERING GRADES 6-7

Operation Conservation Be the expert! The National Zoo is a leader in saving endangered species. Learn about the Zoo's efforts in rehabilitating black-footed ferrets and the Panamanian golden frog, and then get on the case! Do research, complete experiments, and create a plan to save the polar bears. (Formerly known as Survivor).



JESSIE COHEN/NZP

ZOO-CREDIBLES
Week 5: June 15-19

>> ENTERING GRADES K-1

Spider Kids In this camp, we're surfing a different kind of web! Discover the world of our not-so-itsy-bitsy friends and learn just how amazing they are. This class will stick with you!

X-Men What if you had ears three feet wide or a full rack of antlers? Observe animals from head to toe and learn about their x-traordinary features. Then create your favorite animal's ears, nose, tail, or toes and try them on for size! It is sure to be an x-citing time!

>> ENTERING GRADES 2-3

Swamp Thing Many people think crocodiles, snakes, and creepy crawlers have a serious yuck factor. We'll get down and dirty learning about their fascinating behavior and why it can be great to be gross.

Superman-imals Find the nearest phone booth and change into your cape; we're meeting the Zoo's most incredible creatures! Join the Squad as we uncover animals with powers of speed, strength, flight, and more. Then transform into a hero yourself!

Aquaman Dive deep into exploring our underwater animals. Otters, octopus, turtles, and more. Sea for yourself! (Formerly known as Go Fish).

>> ENTERING GRADES 4-5

Captain Planet In the race against extinction, "endangered" means there is still time. You can be part of the solution! Combine your powers and learn how you can make a difference!

Captain American Trail Avengers assemble! Join your fellow superheroes as we race to protect the animals in our own backyard. Bald eagles, seals, and gray wolves need your help. Shield them from extinction and save the day!

BOOK WORMS
WEEK 6: JULY 22-26

>>>ENTERING GRADES K-1

Where the Wild Things Are

A wonderful world unfolds in this five-day investigation of the animal kingdom. Each day, study a different type of animal, including mammals, birds, and reptiles, and learn about the wild places they inhabit.

Babar the Elephant

Pack up your trunk and follow the herd! We're learning about the largest living land mammal—elephants! Study their fascinating adaptations and welcome the National Zoo's elephants to their new home-the Elephant Community Center. (Formerly known as Ele-fun).

>>>ENTERING GRADES 2-3

Charlotte's Web

Terrific is not only Charlotte's word for Wilbur—it's how you'll feel about this class! Meet Wilbur's radiant cousins, our Ossabaw hogs, learn about Templeton's smarts, and admire Charlotte's talented distant relatives, the tarantulas.

Dr. Zoo-euss

Turtles, elephants, and tigers, too. Where can you find them? At the National Zoo! You're sure to have a fabulous time, making crafts and reading rhymes. So come to the park, take a look, and see an animal from a Dr. Seuss book!

>>>ENTERING GRADES 4-5

Harry Otters and the Chambered Nautilus

Take your gillyweed and dive into a wet world to meet the Zoo's magical aquatic creatures, including otters, octopuses, and giant arapaimas. No wand required!

Jungle Book

Calling all man cubs! Join the pack and have a wild time exploring our Asian animals! Learn the bear-necessities of life and become a jungle VIP. It'll be a swingin' good time!

>>>ENTERING GRADES 6-7

Hunger Games

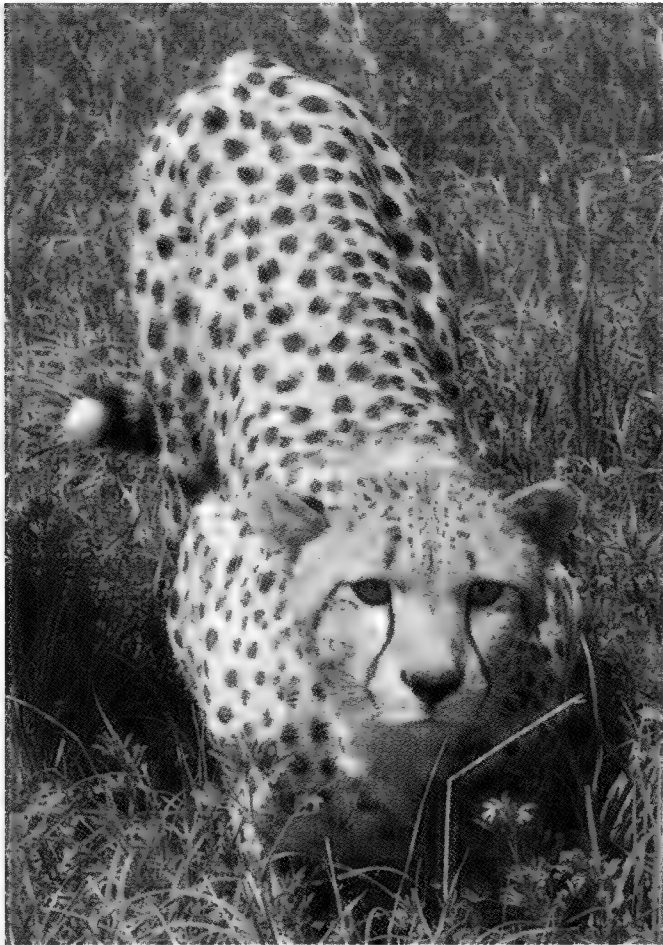
It's survival of the fittest in this dog-eat-dog world. Investigate evolution, how animals have developed, and create your own theory on the future of Zoo species. Will your species survive? How can you help? Your name has been picked, register now, and "may the odds be ever in your favor."

The National Zoo Games
Week 7: July 29-August 2

>>>ENTERING GRADES K-1

Team Tiny

Zoo Olympics is about more than feats of enormous strength. Check out the mini but mighty animals at the National Zoo and what makes these small stars so spectacular!



SMITHSONIAN'S NATIONAL ZOO



JESSIE COHEN/NZP



ANN BATDORF/NZP

Water Winners

You don't need a swimsuit to learn about the amazing aquatic world. Hold your breath as you meet the Zoo's wettest friends. From playful otters to a curious octopus, learn about many creatures that inhabit the world's oceans.

>>>ENTERING GRADES 2-3

Golden Medal Tamarins

Get to know your cousins from itsy-bitsy monkeys to awesome apes. Learn about the O Line and how it enables orangutans to travel high above the Zoo. And there's no denying you'll adore our golden lion tamarins! Monkey around with us all week long.

Leapers Creepers

Visit the Zoo's Reptile Discovery Center and find fascinating creatures lurking behind every corner. From poison dart frogs to the Komodo dragon, slither on over if you dare! Learn about the global amphibian crisis and hop into action to save our froggy friends!

>>>ENTERING GRADES 4-5

Critter Champions

The National Zoo is home to many animal winners. The fastest, the strongest, the biggest, and the smallest. Learn about these superstar animals then go for the gold yourself!

Extreme Animal Athletes

Animals are built for survival. They can live deep in the sea, high in the sky, or in the driest desert. Learn about the amazing adaptations that make these animals winners.

Race for Conservation

Calling all junior environmentalists! Come meet some of the Zoo's endangered animals and learn about the programs in place to save them. The National Zoo is doing its part but needs your help. See what you can do to make a difference.

Zoology 101
Week 8: August 5-9

>>>ENTERING GRADES K-1

Creature Features

Come meet a group of zoo animals that are experts at the game of hide and seek. Spots, stripes, and colors help some animals find dinner and keep others from being on the menu. Learn how critters hide from predators and search for prey. (Formerly known as America's Next Top Species).

Zoo-cietes

One of a kind? Part of a pack? Some animals live in groups while others prefer to go it alone. Study the amazing adaptations of our most social butterflies and more solitary creatures. The more the merrier!

>>>ENTERING GRADES 2-3

Zoo MD

Imagine what it takes to care for a toothy tiger or a slimy salamander. How do you x-ray a stingray or give a shot to a shrew? Zoo veterinarians have one of the toughest jobs around. Visit the Zoo's animal hospital and meet the vets who care for our over 400 different species of animals.

Home Sweet Habitat

There's no place like home! Visit the National Zoo and explore the homes and habitats of our natural builders. Learn more by digging into the animal world before becoming busy bees, beavers, and birds. Join the crew! (Formerly known as Extreme Home Makeover: Zoo Edition).

>>>ENTERING GRADES 4-5

Feasts with Beasts

The animals want to have dinner! No worries. You aren't on the menu. Be our guest as we learn about Zoo nutrition and animal diets. Meet the Zoo's nutritionists and take a behind-the-scenes tour to see what's on the menu. Bon ape-etit! No reservations required. (Formerly known as Top Chef).

The Great Migration

Think walking up the Zoo's hill is bad? Imagine fluttering 3,000 miles! Many animals travel long distances to find food and live. Pack your bags and join us on a journey across the plains, oceans and skies as we study these great adventuring animals on their quest for survival.

>>>ENTERING GRADES 6-7

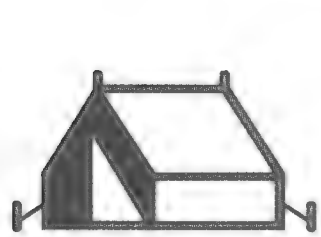
Critter Twitter

Walk. Talk. Grunt and squeak and squawk with the animals. Explore the world of animal linguistics as you study how to communicate with all your senses. Speak with a species and become fluent in a very foreign language.

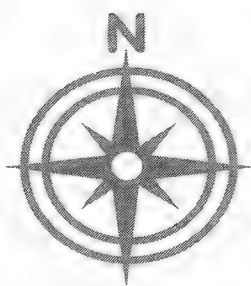
Attention Campers: Nature Calls! CALLING ALL BOYS AND GIRLS ENTERING GRADES 5-10

New at Nature Camp

For 20 years, Friends of the National Zoo has offered a unique residential camp experience at the Smithsonian Conservation Biology Institute (SCBI) headquarters in Front Royal, Virginia. SCBI is an internationally renowned center for veterinary and reproductive research, focusing on sustaining biodiversity through conservation science and expert management of animals both in the wild and in human care.



sleep.



search.



save.

Summer 2013 opens an exciting new chapter in Nature Camp's history, as campers will enjoy the gleaming new facilities of the Smithsonian-Mason School of Conservation (SMSC). A partnership between SCBI and George Mason University, the school is a living and learning community dedicated to training future generations in the vital work of conservation science.

What all this means for Nature Camp 2013 is brand-new dormitories (offering double or triple occupancy with private bath) and a stunning dining hall. The new dining space gives staff, students, and community members a place to come together to share their passion for conservation. We cannot wait to add campers to the mix! What other summer camp gives kids the opportunity to brainstorm with leading scientists over an afternoon snack? And where else can campers encounter college faculty and students whose insights may help campers chart their own educational journeys?

Campers spend a week or two exploring the forests, fields, and

streams on SCBI's 3,200-acre campus. Armed with backpacks and water bottles, they learn to use current field research tools, such as handheld GPS units, camera traps, field guides, compasses, and binoculars to study nature.

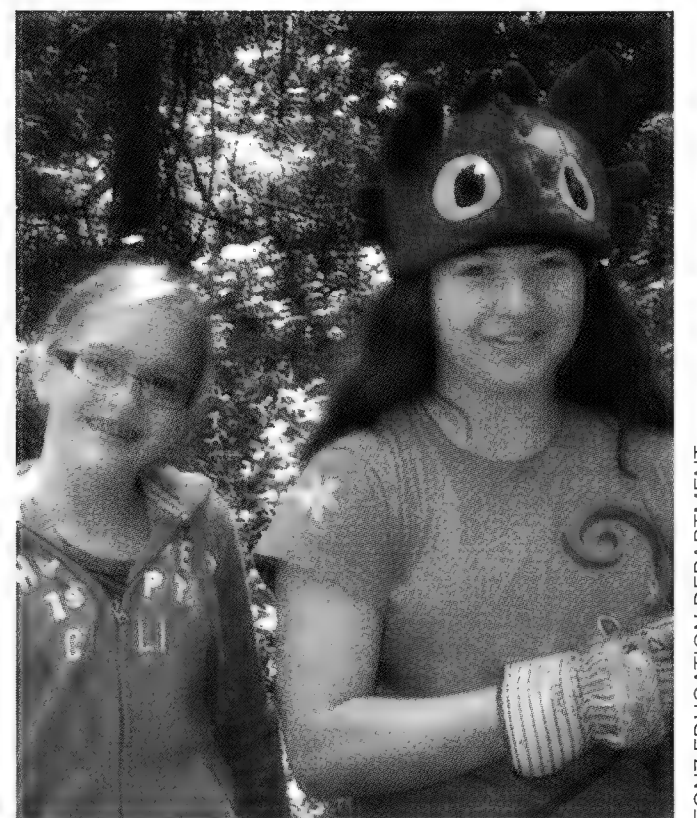
Nature Camp participants also see conservation science in action through behind-the-scenes tours of SCBI's animal facilities and lectures by Smithsonian scientists. The direct interaction with these world-renowned scientists and encounters with endangered species, such as maned wolves or black-footed ferrets, offers incomparable insight into the importance of global ecology and sustainability.

Fun abounds too. In the afternoons and evenings, campers play big group games, go swimming, camp out on Race Track Hill, make s'mores around the campfire, perform in the Friday Night Live Talent Show, and play the popular nighttime predator-prey game, "Fox, Rabbit, Grass, Fungus."



“Campers and counselors alike are friendly and accepting, and by the end, everyone has bonded so much, becoming closer than most people who'd gone to my school, despite knowing each other for years!”

—ASHA, 3 years at Nature Camp



FONZ EDUCATION DEPARTMENT

FONZ EDUCATION DEPARTMENT

**DATES:**

- » One-week sessions for campers entering grades 5 and 6 in the fall: July 7-13.
- » One-week sessions for campers entering grades 7 and 8 in the fall: July 14- 20 and July 21-27.
- » Two-week session for campers entering grades 9 and 10 in the fall: July 28-August 10..

CAPACITY: The maximum is 52 campers per week and a ratio of one staff member per six campers.

STAFF: Camp counselors have a background in biological sciences and experience in outdoor and informal education. All camp staff are certified in CPR and First Aid, and at least one staff member is a certified lifeguard.

LOCATION: The Smithsonian Conservation Biology Institute (SCBI) is in Front Royal, Virginia, about 70 miles from Washington, D.C.

ACCOMMODATIONS:

Campers will be staying in the new dormitories at the Smithsonian-Mason School of Conservation (SMSC). Each room has a private bath and can accommodate up to 3 individuals. Boys and girls will stay on separate floors.

FOOD: Meals will be served in the new SMSC dining hall. Vegetarian options will be available for each meal.

TRANSPORTATION:

Parents are responsible for transportation to and from camp. Directions will be emailed with the confirmation package.

CONFIRMATION PACKAGE:

Once your registration is complete we will send you a confirmation email containing orientation information, as well as a series of participant forms. Please be aware that medical forms require a physician's signature and **all forms must be returned to FONZ by May 1, 2013.**

FEES:

- » One-week session:
Non-member: \$995
FONZ member: \$895
- » Two-week session:
Non-member: \$1,995
FONZ member: \$1,795

REGISTRATION Register online at <http://nationalzoo.si.edu/Education/Camps/NightCamp/>

PRIORITY REGISTRATION

(FONZ members with a Contributing (2012) or Premier+ (2013) membership):
January 29 at 10 a.m.

Use coupon code KIWI2013 when registering to secure the member rate.

FONZ MEMBER

REGISTRATION (Household or Premier level members):
February 5 at 10 a.m.

Use coupon code KIWI2013 when registering to secure the member rate.

NON-MEMBER

REGISTRATION:
February 12 at 10 a.m.

CANCELLATION POLICY:

Cancellation requests received at least four weeks prior to the start of the session will receive a 75 percent refund. Transfer requests received at least four weeks prior to the start of the session will be charged a 10 percent administration fee. Requests must be received via email. No refunds or changes will be made with less than four weeks notice.

“ FONZ Nature Camp is probably my favorite place in the world. It is the most fun camp I have ever been to, and I have been to many. I encourage anyone who loves nature, animals, hiking, camping, and having fun to sign up. We do tons of fun activities such as canoeing, group games, and going on adventures in the forest at night. My summer would simply not be the same without this camp. I think everyone who cares about the environment around us should have this amazing opportunity to learn, experience, and have fun. ”

—ALEXA, 5 years at Nature Camp

FONZ CLASSES

MEGHAN MURPHY/NZP



Learn at the Zoo!

FONZ classes give children a deeper understanding of animals, their behaviors, and their habitats. Varying somewhat in structure, classes generally include hands-on activities, crafts, and time in the Zoo. Please note that classes do not include behind-the-scenes visits or direct contact between children and animals. Classes meet in the Visitor Center unless otherwise noted.

Register online at fonz.org/classes.htm.

Use coupon code **SLOTHBEAR2013** when registering to secure the member rate.

PRESCHOOL CLASSES

These programs invite adults and children to discover the Zoo together. All children must be accompanied by an adult. For everyone's safety and enjoyment, unregistered children and siblings may not attend—except for infants who do not yet crawl.

Abby Cadabby

Are you a fairy-in-training? Take this crash course in wand handling and learn about the butterflies! Then earn your own wings! Time will fly in this super fun class!

AGES: 2-3
FEE: \$32 Non-Member
\$25 Member
DATE: February 2
TIME: 10-11:30 a.m.

Big Bird

Our big birds aren't yellow, they're pink! Flap your wings, stand on one foot, and walk with our long legged flamingo friends! How many birds can you count in the pond?

AGES: 2-3
FEE: \$32 Non-Member
\$25 Member
DATE: February 23
TIME: 10-11:30 a.m.

In Like a Lion

There's no need for a passport when you can explore the savanna at the National Zoo! We're beaming with pride over our lions. Spend the day learning about our kings and queens then enjoy the mane event: a zoo walk to see the cats! We're not lion, it's going to be grrrr-eat!

AGES: 2-3
FEE: \$32 Non-Member
\$25 Member
DATE: March 3
TIME: 10-11:30 a.m.

Out Like an...Alpaca

The National Zoo may not have a lamb, but we have our own fleece-bearing friends: alpaca! Join us for a day on the farm. Mooove your schedule around because you won't want to miss this opportunity to learn more and get up close to the Zoo's not-so-wild animals that live at the Kid's Farm sponsored by State Farm®.

AGES: 2-3
FEE: \$32 Non-Member
\$25 Member
DATE: March 10
TIME: 10-11:30 a.m.

Spring, Sprang, Sprung

Let us help put the spring back in your step! The frost is thawing, buds are sprouting, and the National Zoo is back in action. Leap into learning as we explore our bouncing critter friends. Jump to it and register now!

AGES: 2-3
FEE: \$32 Non-Member
\$25 Member
DATE: March 10
TIME: 10-11:30 a.m.

Animal Movement

Fly, slither, swing, and swim as we learn how our critter pals get from here to there. Take a step in the right direction preparing your child for school through centers, story time, and Zoo walks. Get a move on and register now!

AGES: 2-3
FEE: \$125 Non-Member
\$100 Member
TIME: 10-11:30 a.m.

DATES:

SESSION 1: February 25;
March, 4, 11, 18
SESSION 2: February 26;
March 5, 12, 19
SESSION 3: February 27;
March 6, 13, 20
SESSION 4: February 28;
March 7, 14, 21
SESSION 5: March 1, 8, 15, 22

What's for Dinner?

This is a class you can surely sink your teeth into. Be our guest and learn about our favorite animals' favorite foods while satisfying your child's appetite for learning. Colors, numbers, letters, and social skills are all on the menu! Reservations required!

AGES: 2-3

FEE: \$157 Non-Member
\$125 Member

TIME: 10-11:30 a.m.

DATES:

SESSION 1: April 8, 15, 22, 29;
May 6

SESSION 2: April 9, 16, 23, 30;
May 7

SESSION 3: April 10, 17, 24;
May 1, 8

SESSION 4: April 11, 18, 25;
May 2, 9

SESSION 5: April 12, 19, 26;
May 3, 10



MEHGAN MURPHY/NZP



MEHGAN MURPHY/NZP

NEW! Family Programs

Bring your children four to eight years old to the Zoo for a wild time of learning together as a family!

What's In an Egg?

You're the detective! Each week your zoo-goer will help us uncover the mystery of what hatched from the egg. Was it a bird, a reptile, an amphibian? Find the evidence, piece together the clues, then uncover "Zoo-dunnit!"

AGES: 4-8

FEE: \$35 Non-Member
\$28 (\$50 for 2 children) Member

TIME: 10 a.m.-12:00 p.m.

DATES:

FEB. 3: EGG #1

FEB. 17: EGG #2

FEB. 24: EGG #3

Animal Sensations

This is so much more than "one, singular sensation," it's five! All animals have keen senses that help them survive in a dangerous world. Some have a great sense of smell; some can feel with their whiskers. Come explore "sensational" animals with your five senses and learn what it means to "see" with your nose or "hear" with your hairs.

AGES: 4-8

FEE: \$35 Non-Member
\$28 (\$50 for 2 children) Member

TIME: 10 a.m.-12:00 p.m.

DATES:

MARCH 2: SIGHT, TIGERS

MARCH 9: TASTE: BUTTERFLIES

MARCH 17: TOUCH, NAKED MOLE RATS

MARCH 23: SMELL, VULTURES

MARCH 30: HEAR, ELEPHANTS (with a visit to the NEW Elephant Community Center!)



JESSIE COHEN/NZP

CHILDREN'S WORKSHOPS

Parents are not encouraged to stay with the class, but may if they wish (for no charge).

Animal Amour

Love is in the air! In honor of Valentine's Day, come and explore love in the animal kingdom and learn about the Zoo's role as an animal matchmaker. Then head out in the park to see the results of Cupid's success.

AGES: 8-12

FEE: \$35 Non-Member
\$28 (\$50 for 2 children) Member

TIME: 10 a.m.-Noon

DATE: February 16

Your Lucky Day

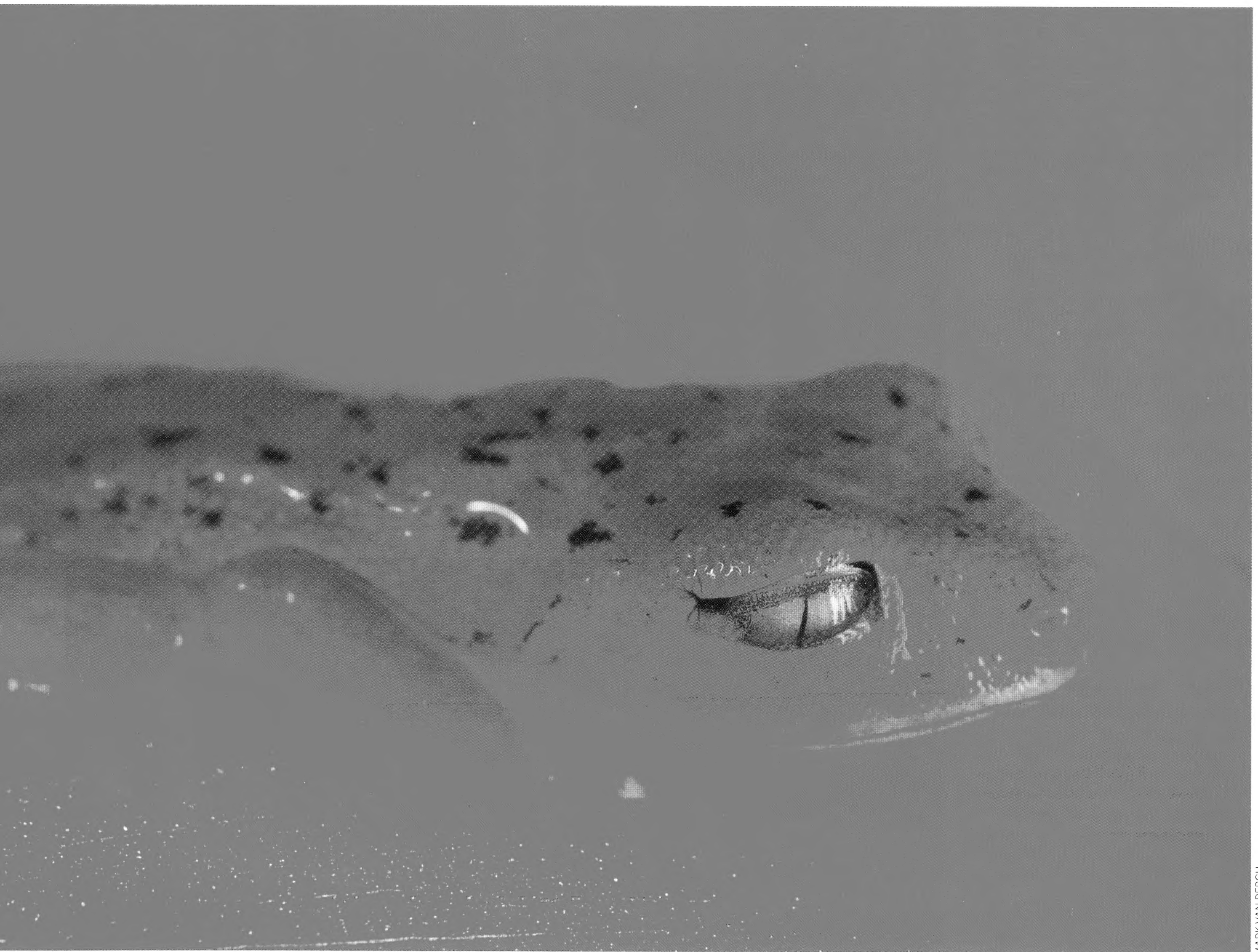
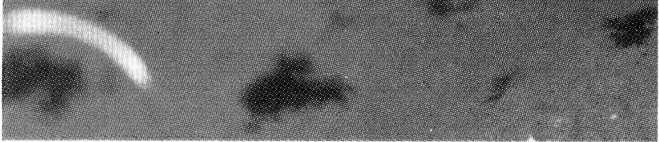
Top o' the mornin' to ya! Celebrate St. Patrick's Day at the National Zoo! Spend the day following a rainbow of animals to find the pot of gold. Make your friends green with envy and register now!

AGES: 4-8

FEE: \$35 Non-Member
\$28 (\$50 for 2 children) Member

TIME: 10 a.m.-12 p.m.

DATE: March 17



MARK VAN BERGH

Rhapsody in Green

Mark Van Bergh's gift for capturing life at the Zoo and his generosity in sharing his artistry have made him a key contributor to the vital work of educating the city and the world about the Zoo's mission.

Van Bergh created this arresting image during a FONZ Photo Club event at Amazonia. A friend helped illuminate the frog from behind while Van Bergh took the portrait.

Technical Notes — CAMERA: Sony A700;
LENS: Minolta Maxxum 100/2.8; ISO: 400

Smithsonian Zoogoer


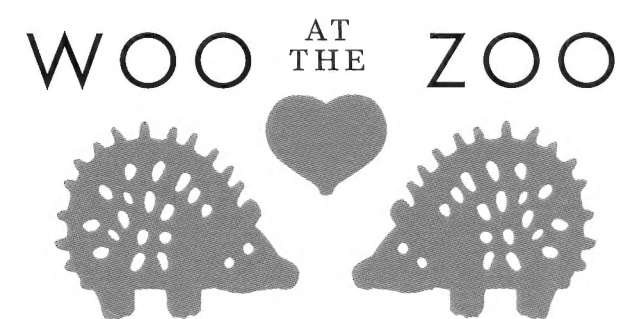
welcomes FONZ members' submissions of photos taken at the Zoo. Please send photos to **Zoogoer@si.edu**. We will contact you if we are able to use your picture for the Zoo View page.

Join the Club!

Membership in the FONZ Photo Club is open to photographers of all skill levels. The group meets monthly to hear guest speakers and to share and discuss members' work. Learn more at ***fonz.org/photoclub.htm***.

Like “Sex in the City” except Carrie is a porcupine.

In celebration of Valentine's Day, learn about animal mating and dating habits from our experts. Join us on February 9, 2013. Buy tickets at www.fonz.org/woo.htm.

A black and white photograph of a sloth's head and trunk. The sloth is looking down, and its long, wrinkled trunk is visible. The background is dark and out of focus.

**I like you
more than
eating bugs.
And I really
like eating
bugs.**

ADOPT A SPECIES THIS VALENTINES DAY! Show that special someone how much you love them with a gift that supports science, animal care, medicine, habitat improvement, and enrichment at the National Zoo. Order today fonz.org/adopt.htm.



Friends of the National Zoo, PO Box 37012, MRC 5516, NW, Washington, DC 20013-7012, www.fonz.org

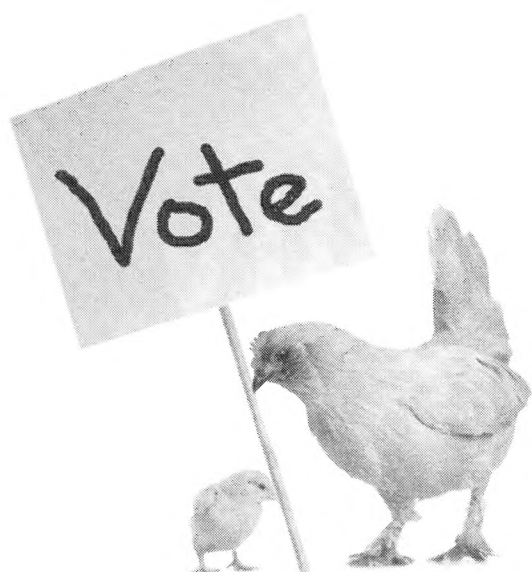


Smithsonian
National Zoological Park

Thank you for being a FONZ member.
Your membership supports animal care,
science, conservation, and more.



The Mani-Feast-O



1) Get Involved

Join the Pizza Party! A group of citizens united by the goal of restoring the Zoo's Pizza Playground where children learn and play.



2) Support the Cause

We need your help to accomplish our goal! Without the support of FONZ members important projects like this would not get completed.



3) Take Action

Vote! Make a donation today and let your voice be heard! "Save the Pizza!". **Online at fonz.org/pizzaparty.htm**



4) Celebrate

Party at the pizza! We will throw a VIP pizza party event when our mission of saving the pizza has been accomplished.

